

**CLAIMS**

1. A purified polypeptide comprising a portion of a mammalian Flt4 receptor tyrosine kinase (Flt4) extracellular domain (EC).
2. A purified polypeptide according to claim 1, wherein the Flt4 is  
5 human.
3. A purified polypeptide according to claim 1, wherein the Flt4 amino acid sequence is selected from the group consisting of SEQ ID NO: 2 and SEQ ID NO: 4.
4. A purified polypeptide according to claim 1, wherein the fragment  
10 comprises Flt4 amino acid sequence capable of generating an immune response specific to Flt4.
5. A purified polypeptide according to claim 1, wherein the fragment  
comprises Flt4 amino acid sequence capable of generating an immune response that  
produces antibodies which bind to Flt4 and fail to bind to Flt1 receptor tyrosine  
15 kinase.
6. A purified polypeptide according to claim 1, comprising at least one immunoglobulin-like domain of the Flt4-EC.
7. A purified polypeptide according to claim 6, comprising the first immunoglobulin-like domain of the Flt4-EC.
- 20 8. A purified polypeptide according to claim 6, comprising the second immunoglobulin-like domain of the Flt4-EC.

9. A purified polypeptide according to claim 6, comprising the third immunoglobulin-like domain of the Flt4-EC.
10. A purified polypeptide according to claim 6, comprising the first, second, and third immunoglobulin domain of the Flt4-EC.
- 5 11. A soluble polypeptide according to claim 1.
12. A polynucleotide comprising a nucleotide sequence that encodes the polypeptide of claim 1.
- 10 13. A polynucleotide according to claim 12, further comprising an expression control sequence operatively linked to the sequence that encodes the polypeptide.
14. An expression vector comprising an expression control sequence operatively linked to a polynucleotide according to claim 12.
15. An expression vector according to claim 14, wherein the expression control sequence comprises a promoter that promotes expression in a mammalian cell.
- 15 16. An expression vector according to claim 15 that is a viral vector selected from the group consisting of retrovirus, adenovirus, adeno-associated virus, vaccinia virus and herpesvirus.
17. A host cell transformed or transfected with a vector according to claim 15.
- 20 18. An isolated polypeptide comprising a Flt4 fragment that is encoded by a polynucleotide or oligonucleotide which hybridizes to a human gene encoding a

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*FLT4* receptor tyrosine kinase, under hybridization conditions wherein said polynucleotide or oligonucleotide fails to hybridize to a human gene encoding *FLT1*, said hybridization conditions comprising:

- 5       (a) a hybridization solution comprising 50% formamide, 5x Denhardt's solution, 5x SSPE, 0.1% SDS, and 0.1 mg/ml sonicated salmon sperm DNA;
- (b) hybridization at a temperature of 42°C for a duration of 18 to 24 hours; and
- (c) washing following the hybridization at a wash temperature of 65°C, with a wash solution comprising 1x SSC and 0.1% SDS.

19. An isolated polypeptide according to claim 1, wherein said Flt4  
10 fragment is encoded by a polynucleotide or oligonucleotide that consists of a continuous nucleotide sequence of at least 200 nucleotides from a nucleotide sequence selected from the group consisting of: SEQ ID NO: 1, a nucleotide sequence complementary to SEQ ID NO: 1, SEQ ID NO: 3, and a nucleotide sequence complementary to SEQ ID NO: 3.